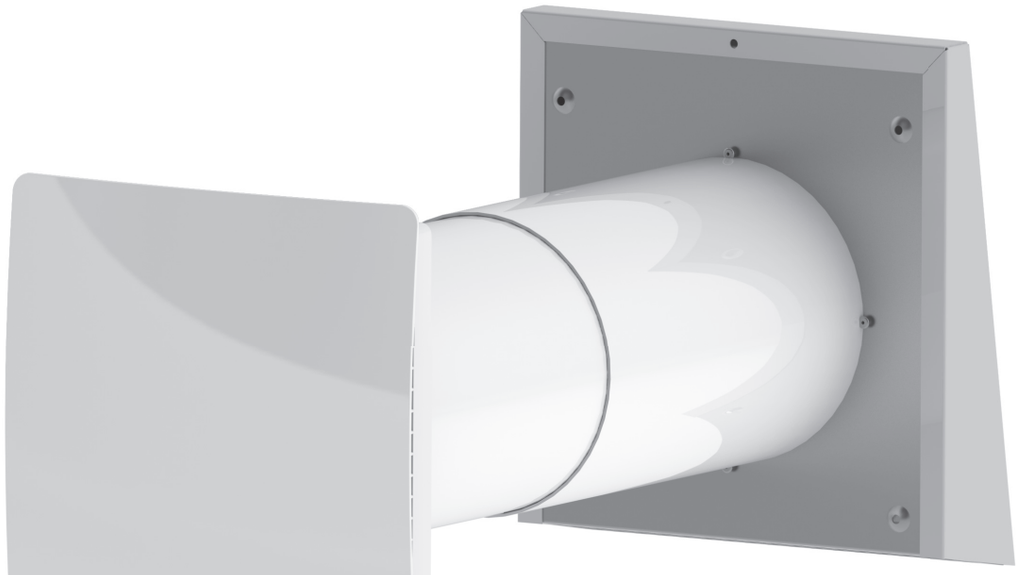
USER'S MANUAL

TwinFresh R1-50



SINGLE-ROOM REVERSIBLE VENTILATOR

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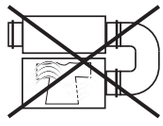
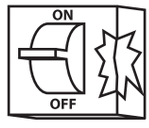
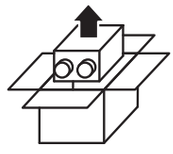
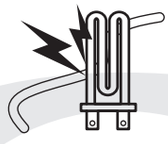
SAFETY REQUIREMENTS

- Read carefully the user's manual prior to starting mounting and operation.
- While mounting and operating the unit consider the requirements of the present user's manual as well as requirements of all applicable local and national building and electrical codes and standards.
- Read carefully the warnings contained in the manual to make yourself aware of the safety rules!
- Non-compliance with the rules and precautions stated in the user's manual may result in a personal injury or the unit damage.
- Read the manual carefully and keep it as long as you use the product.
- In case of transferring operation of the unit to another person provide the user manual.

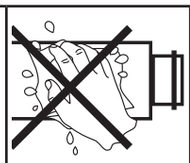
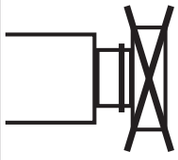
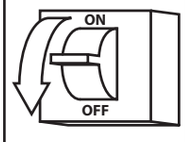
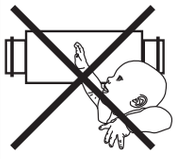
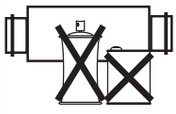
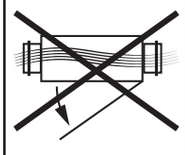
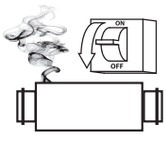
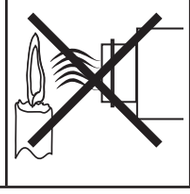
Symbol legend used in the manual:

	WARNING!
	DO NOT!

MOUNTING SAFETY PRECAUTIONS

	Disconnect the unit from power supply before mounting and repair operations.		Use the unit for the purpose intended only.
	Do not operate the unit beyond the specified temperature range. Do not operate the unit in an aggressive and explosive medium.		Do not use damaged electric equipment and conductors for electric connections.
	Follow all applicable electrical safety rules while operating and mounting the unit.		Unpack the unit carefully.
	Unauthorized power cable length modification is not allowed. Do not bend and do not damage the power cable.		Keep heating and other devices away from the unit power cable.

OPERATING SAFETY PRECAUTIONS

	Do not touch the speed controller or the control panel with wet hands! No maintenance is allowed with wet hands.		Do not rinse the unit under water. Protect the unit electric parts from water ingress.
	Do not block the air duct when the unit is on.		Disconnect the unit from power supply before maintenance.
	Do not let children operate the unit.		Do not damage the power cable while operating the unit. Do not put any objects on the power cable.
	Keep explosive and inflammable products away of the unit.		Do not open the operating unit.
	In case of unusual sounds, smoke disconnect the unit from power supply and contact the service centre.		Do not let air flow from the unit be directed to the open flame devices or candles.

INTRODUCTION

This user's manual includes technical description, operation, installation and mounting guidelines, technical data for the single-room reversible ventilator TwinFresh R1-50, hereinafter referred as the unit.

USE

The unit is designed to arrange permanent controllable air exchange in flats, cottages, hotels, cafes and other domestic and public premises. The unit is equipped with a ceramic heat exchanger that enables supply of fresh air due to extract air heat energy utilization. The unit heat exchange efficiency reaches 91%.

The unit is designed for through-the-wall mounting. The unit it suitable for installation in the walls from 250 mm up to 470 mm.

The unit is rated for continuous operation.

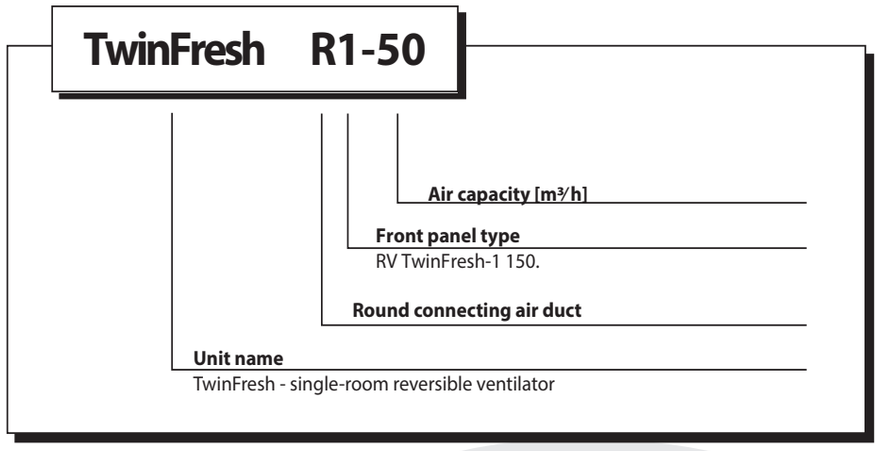
Transported medium must not contain any flammable or explosive mixtures, evaporation of chemicals, coarse dust, soot and oil particles, sticky substances, fibrous materials, pathogens or any other harmful substances.

The unit is designed operation at the ambient temperature ranging from -20°C (-4 °F) up to +50°C (+122 °F).

DELIVERY SET

- unit - 1 item;
- Power cable, 3 m Unitronic LIYY UL CSA 5xAWG/7 (5x0.25) - 1 item;
- User's manual - 1 item;
- Packing box - 1 item;
- Fasteners - 1 item.

UNIT DESIGNATION KEY



TECHNICAL DATA

The main unit overall and connecting dimensions, outer view and technical parameters are shown in fig. 1 and in table 1.

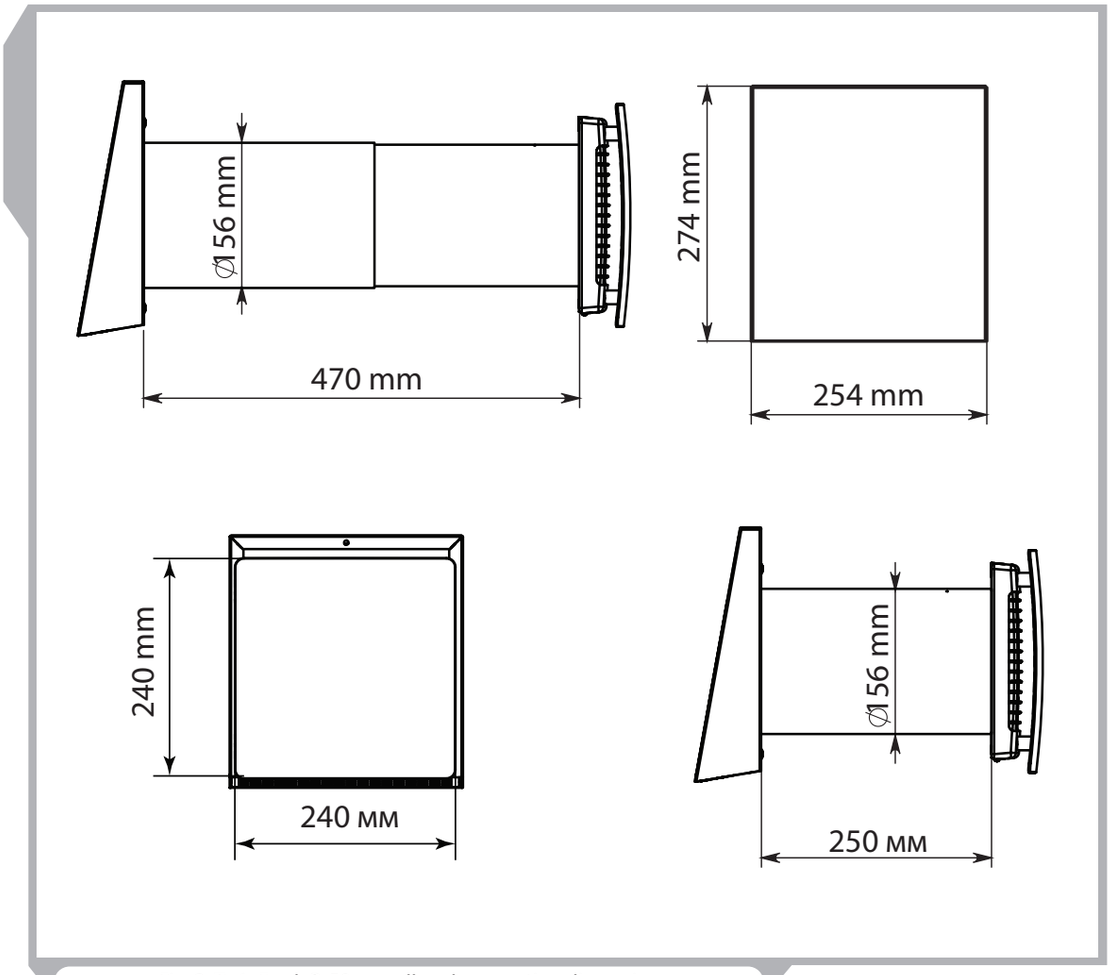


Fig. 2. TwinFresh R-50 overall and connecting dimensions

Table 1. Technical data

Mode	Voltage [V]	Power [W]	Air capacity [m^3/h] (CFM)	RPM [min^{-1}]	Noise level, [dB(A)]	IP
1	230V/50 Hz	1,4	25	570	22	24
2		3,0	50	1100	29	

DESIGN AND OPERATING LOGIC

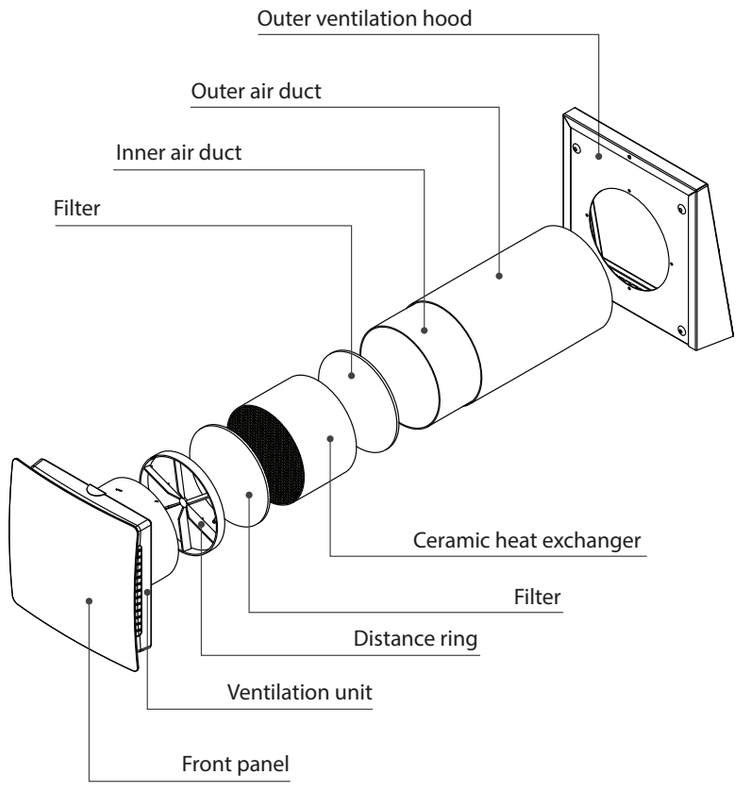


Fig. 2.Unit design

The unit consists of a plastic telescopic air duct, a ventilation unit with a decorative front panel and an outer ventilation hood, fig. 2.

The total telescopic air duct length is regulated due to position of the inner telescopic duct inside the outer telescopic duct.

Two filters and a ceramic heat exchanger are installed in the inner telescopic air duct. The filter is designed for supply air cleaning and prevention of dust and foreign objects ingress inside the heat exchanger and the impeller. The heat exchanger is used to warm up supply air flow by extract air heat energy and provide supply of warmed-up and filtered air to the room. The heat exchanger has a pull cord inside to facilitate the unit maintenance.

The ventilation unit with a decorative front panel are to be installed on inner side. The outer ventilation hood is to be installed on the outer building side to prevent ingress of water and large foreign objects into the unit.

MOUNTING AND SET-UP

The unit is designed for installation into a specially designed through hole inside a wall. The hole must be perpendicular to the wall plane.

The mounting guidelines for the single-room reversible ventilator are shown in fig. 3, 4.

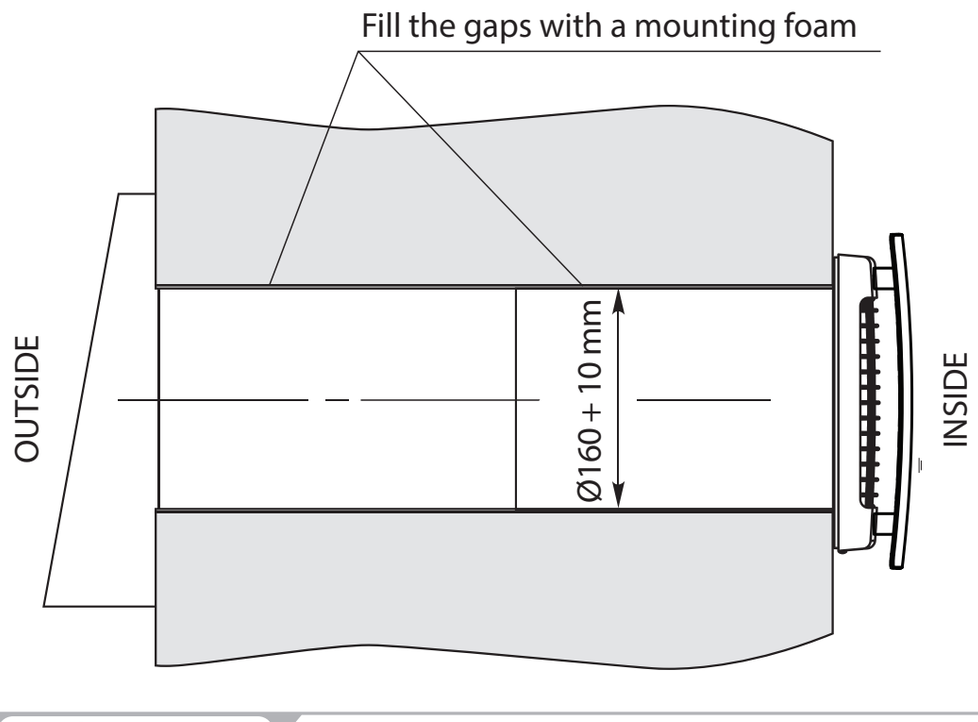


Fig. 3. Unit mounting

Install the telescopic duct in the hole from outside and fill the gaps between the duct and the wall with a mounting foam. For easy mounting keep the clearances between the duct and the wall within 5-10 mm. Fix the outer hood according to the wall holes with four 4x35 screws and the dowels 6x35 included into delivery set, fig. 4. Fix the ventilation unit to the wall with the screws 3x25 included into delivery set and the dowels 5x25, fig. 4.

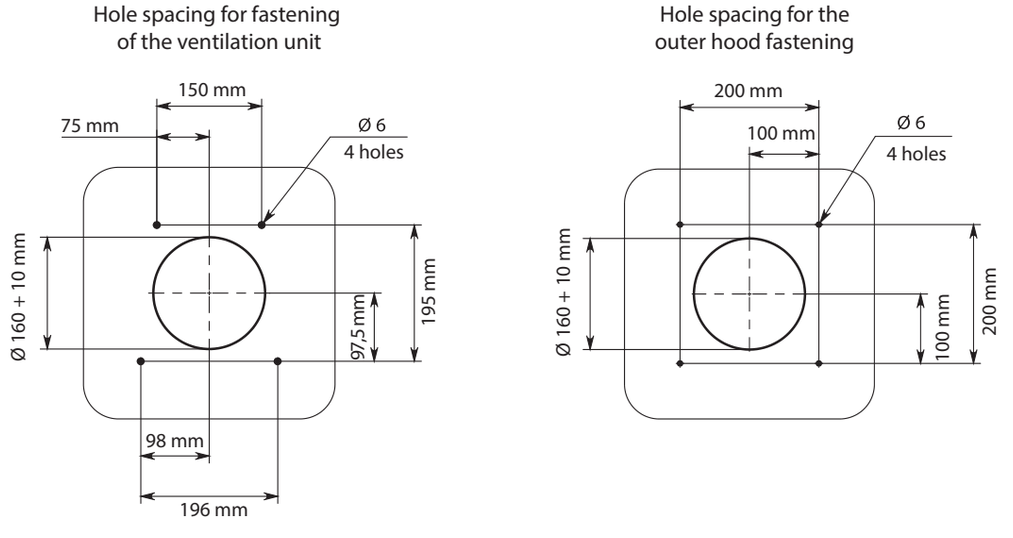


Fig. 4. Hole spacing for the unit mounting

The KVR-T control and the transformer unit (special accessory) is to be installed in a specially designed and prepared hole in a wall as shown in fig. 5, in inaccessible for children places. While installation consider the length of the cable supplied with the unit.

A longer cable may be used on customer demand. The recommended cable type and marking are stated in the Delivery Set section.

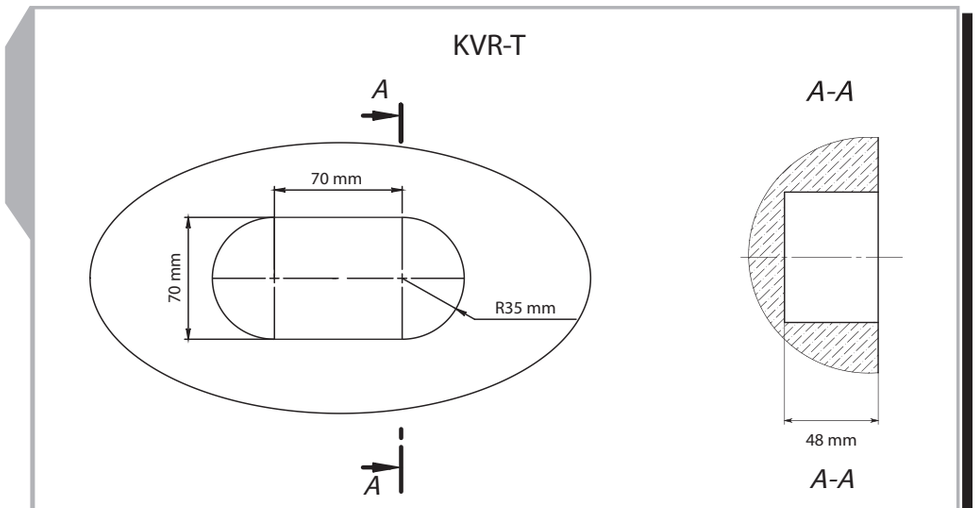
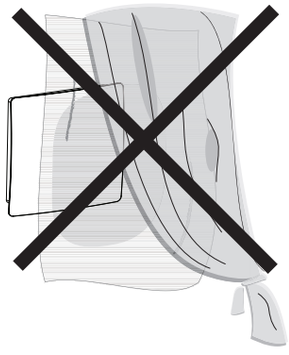


Fig. 5. Hole spacing for mounting of the control unit KVR-T (special accessory)



WARNING!
DO NOT INSTALL THE UNIT CLOSE TO CURTAINS, HANGINGS AND OTHER OBJECTS THAT MAY BLOCK THE AIR DUCT AND CAUSE DUST ACCUMULATION ON THE UNITS.

CONNECTION AND CONTROL

The unit is controlled with the external control and power unit KVR-T (special accessory), fig. 6.

The control and power KVR-T unit is used for operation mode selection and control. The unit is rated for connection to single-phase 230 V / 50 Hz. Separate power supply must be provided both to the control and power unit and to the ventilation unit.

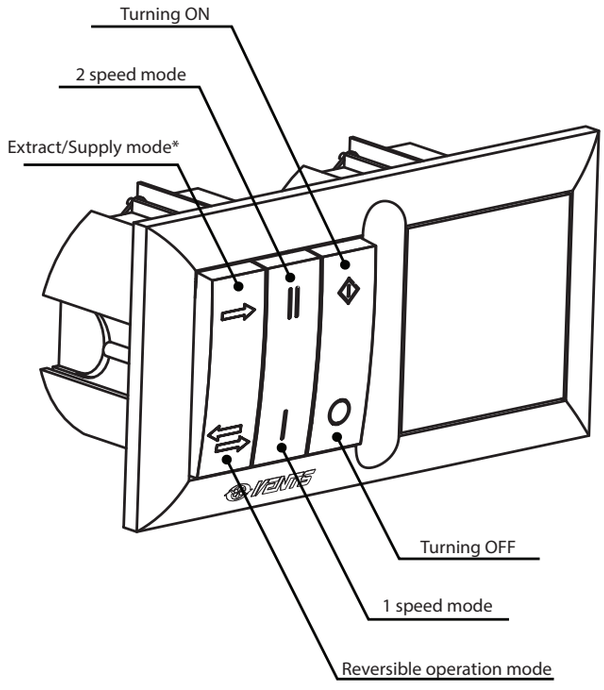


Fig. 6. KVR-T control and power unit.

Table 2. KVR-T data

Control and power unit name	Transformer data			Note
	Power [W]	Voltage [V]		
		Input	Output	
KVR-T-12	12	230V/50 Hz	12	Connection up to 4 units

The control unit is a three-key switch with an integrated printed circuit board for installation into a standard junction box. All electric connection to the control unit and the ventilator are performed with the socket connectors for mounting and servicing facilitation. Each mating part of the socket connector has a colour marking in compliance with marking on the circuit board to ensure correct and quick electric installation.

The control unit is used to set one of four operation modes of the unit, fig. 6:

1. Ventilation mode (air extract / air supply)* at first speed with air flow 25 m^3/h.

2. Ventilation mode (air extract / air supply)* at second speed with air flow 50 m^3/h.

3. Reverse (heat recovery) operation at first speed with air flow 25 m^3/h. The ventilator changes operation mode (air extract / air supply) every 70 seconds.

4. Reverse (heat recovery) operation at second speed with air flow 50 m^3/h. The ventilator changes operation mode (air extract / air supply) every 70 seconds.

* - air flow direction depends on position of the jumper JMP1 on the circuit board. The jumper is set to provide supply mode by default, fig. 6.

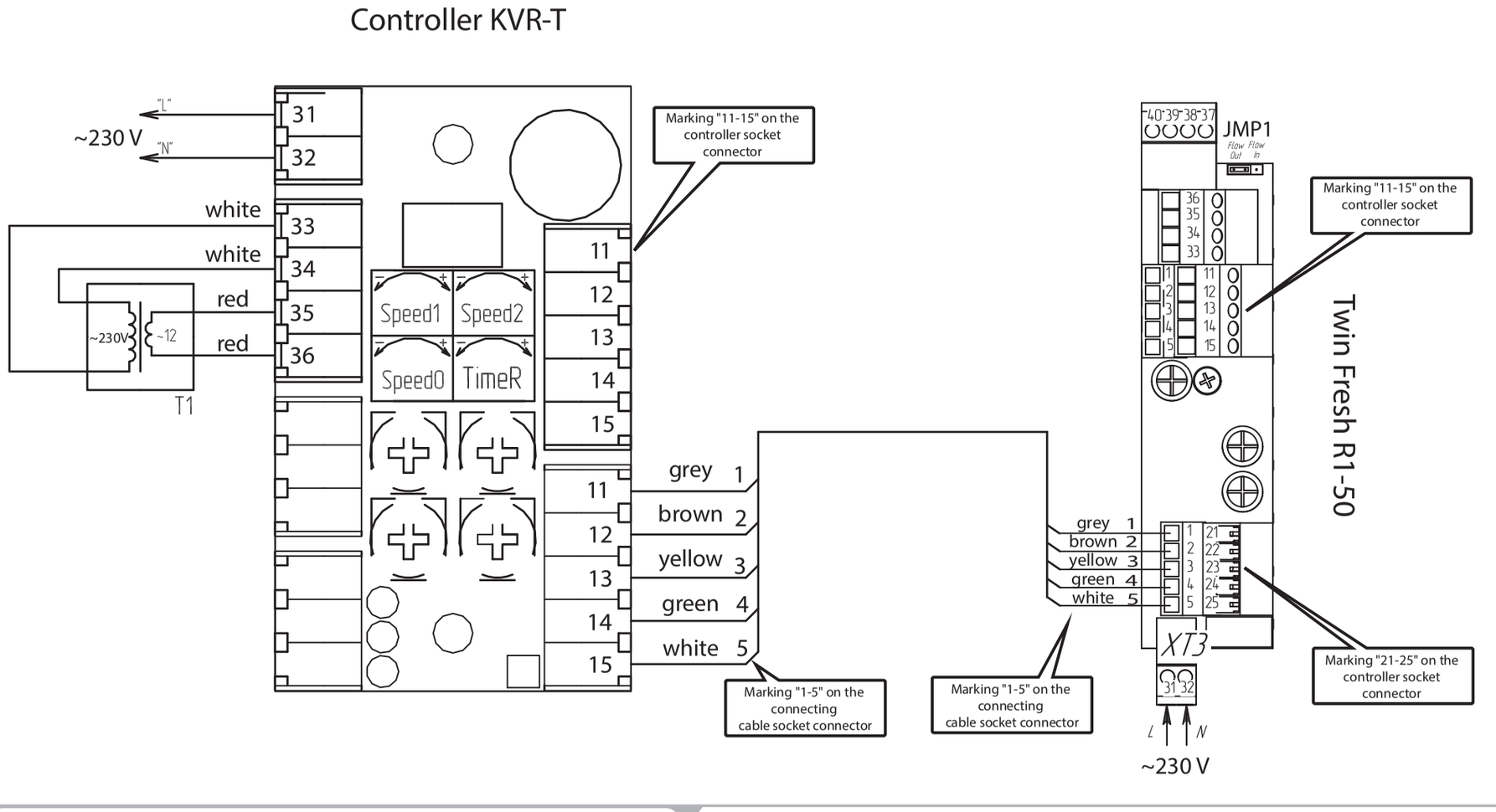


Fig. 7. Total wiring diagram for TwinFresh R1-50 connection to KVR-T controller

The unit is connected to the KVR-T controller with two cable channels. In ventilation mode all the connected units operate in air extract mode (the JMP1 jumper on the circuit board is in Flow out position) or in supply mode (the JMP1 jumper on the circuit board is in Flow in position).

The electric connection is performed with a five-wire cable. The wires are marked in compliance with the delivered cable for easy installation. The minimum conductor cross section is 0.25 mm2. Power supply 230 V / 50 Hz must be provided both to the KVR-T control unit and to the ventilation unit (socket connectors 31-21 in each case).

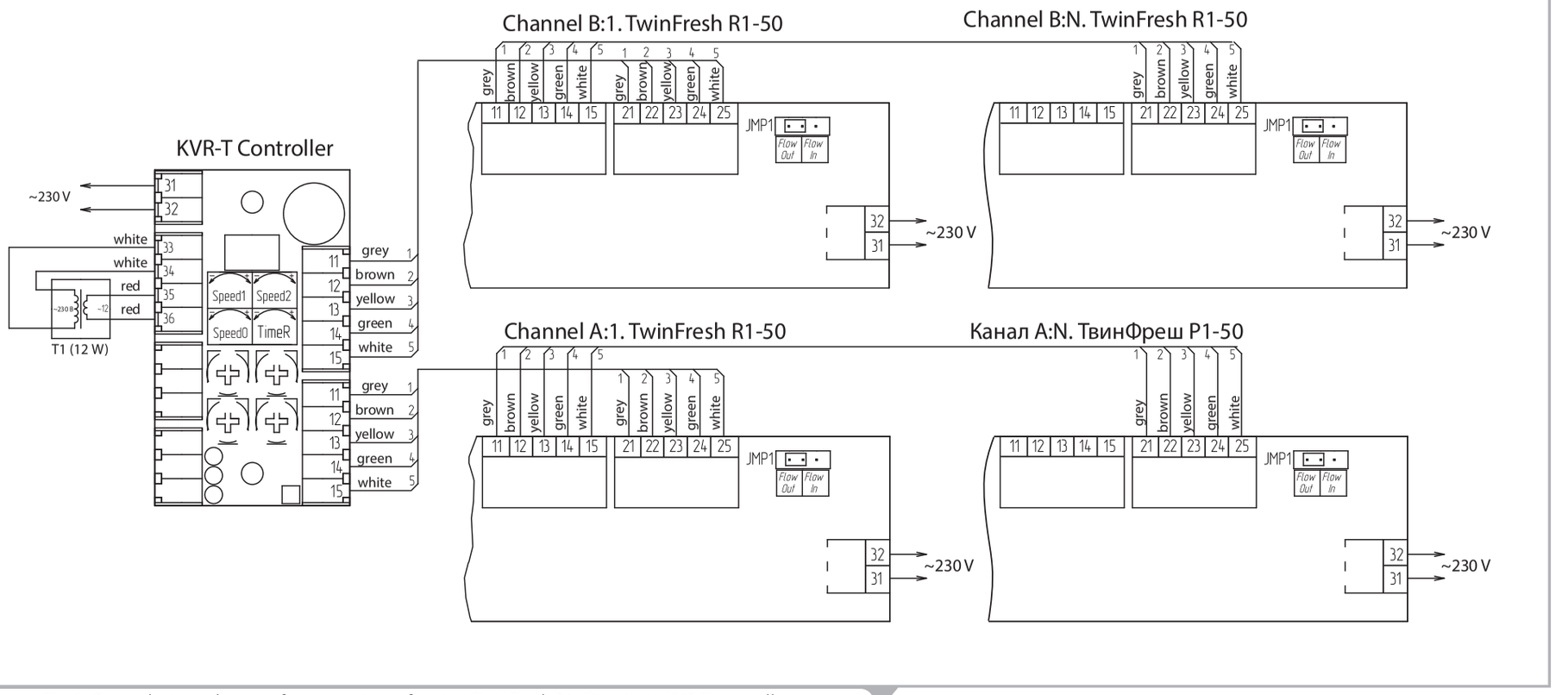


Fig. 8. General wiring diagram for connection of up to 4 TwinFresh R1-50 units to KVR-T controller

To connect up to 4 TwinFresh R1-50 units, follow the wiring diagram in fig. 8. Power supply 230 V / 50 Hz must be provided both to KVR (KVR-T) control unit and to each ventilation unit (socket connectors 31-32 for each case). The inputs at the controller socket connectors are marked 21 to 25.
The outputs at the controller socket connectors are marked 11 to 15.
The socket connectors on the delivered connecting cable delivered with the KVR-T unit are marked 1 to 5 and are designed for connection to the controller socket connectors , 11-15 for outputs and 21-25 for inputs.

MAINTENANCE

Disconnect the ventilator from power supply before any maintenance operation with the unit. Maintenance of the unit means regular cleaning of the unit surfaces of dust and cleaning or replacement of the unit filters.

Removing of the heat exchanger and the filters: first take off the front panel, unscrew the fasteners, disconnect and remove the fan and the distance ring. The heat exchanger is equipped with a special cord to facilitate its withdrawal together with the filters, fig. 9.

Remove dust with a soft brush, cloth or compressed air. Do not use water, abrasive detergents, solvents, sharp objects. The impeller blades must be cleaned once in year.

Clean the filters as often as these gets soiled, but at least every 3 months.

To clean the filters flush those with water or use a vacuum cleaner. After cleaning install the dry filters inside the air duct.

The filter rated service life is 3 years. Contact the Seller for the new filters.

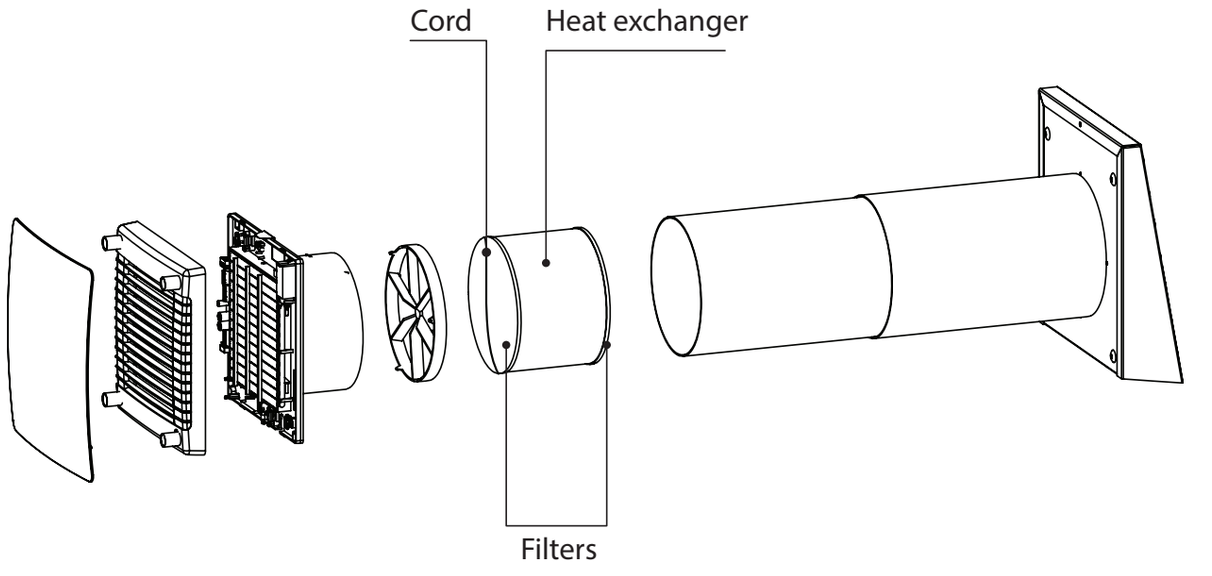


Fig. 9. Unit maintenance

TROUBLESHOOTING AND FAULT HANDLUNG

Table 3

Faults and fault handling		
Problem	Possible reasons	Fault handling
The unit does not start	No power supply	Make sure of correct power supply, otherwise troubleshoot the connection error.
	The motor is jammed.	Turn the unit off. Troubleshoot the motor jam. Restart the unit.
Low air flow	The filters are soiled.	Clean the filters.
Noise, vibration	The fan impeller is clogged.	Clean the fan impeller.
	The screw tightening is loose.	Check and tighten the screws.

STORAGE AND TRANSPORTATION RULES

Store the unit in the manufacturer's original packing box in a dry ventilated premise at the temperatures from +10°C up to + 40°C .

Storage environment must not contain aggressive vapours and chemical mixtures provoking corrosion, insulation and sealing deformation.

Use hoist machinery for handling and storage operations to prevent the unit damage in consequence of falling or excessive oscillation. Fulfil the handling requirements applicable for the applicable freight type.

Transportation with any vehicle type is allowed provided that the unit is protected against mechanical and weather damage.

Avoid any mechanical shocks and strokes during handling operations.

MANUFACTURER'S WARRANTY

The manufacturer sets forth the warranty period of the unit 24 months following the sale date via retail network, subject to the customer's ensuring compliance with the rules of transportation, storage, mounting and operation of the product.
In case of any unit malfunctions caused by a manufacturing defect within the warranty period the customer has a right for elimination of unit defects by means of warranty servicing performed free of charge.
The warranty servicing implies performance of activities related to elimination of defects in the unit aimed to provide intended use of the unit by the customer within the warranty period. The defects are eliminated either by replacing or repairing some unit components or a unit assembly.

The warranty servicing does not include:

- periodic unit maintenance;
- mounting/dismantling
- unit setup.

In case of warranty claim please submit the user manual with the sale date mark and an invoice to confirm the unit purchase.
The unit model shall comply with that one specified in the user manual.
For waranty service please contact your Seller.

Manufacturer's warranty shall not apply in the following cases:

- failure to submit the unit in complete set according to the package content stated in the user manual, including dismantling of the unit components;
- noncompliance of the unit model or marking to the data stated in the unit packaging and in the user manual;
- non-timely technical maintenance of the unit;
- visible damages of the unit casing and internal assemblies (external unit modifications required for the unit mounting are not considered as damages);
- altering the unit design or reworking of the unit;
- replacing and using parts, units and components of the unit not prescribed by the manufacturing company;
- misuse of the unit;
- violation of the unit mounting rules by the user;
- violation of the unit operation rules by the user;
- connecting the unit to power mains other than stated in the user manual;
- unit failure resulted from step voltage in power mains;
- unauthorised repair of the unit;
- repair of the unit by third persons unauthorised by the manufacturing company;
- warranty period expiry;
- violation of the unit transportation rules;
- violation of the unit storage rules;
- unlawful actions by third persons with respect to the unit;
- unit failure resulted from force majeure (fire, flood, earthquake, war, hostilities of any kind, blockade);
- absent seals, provided such seals are prescribed by the user manual;
- failure to submit the user manual with the sale date marking;
- failure to submit the invoice to confirm the unit purchase.

FOLLOW THE USER'S MANUAL REQUIREMENTS TO ENSURE NON-STOP AND TROUBLE-FREE OPERATION OF THE UNIT.

WARRANTY CLAIMS FROM THE USER ARE ACCEPTED IN CASE OF SUBMITTING THE UNIT, THE RELATED INVOICE AND THE USER'S MANUAL WITH THE SALE DATE MARKING.

ACCEPTANCE CERTIFICATE

Product type	Single-room reversible ventilator
Model	TwinFresh R1-50
Serial number	
Production date	
is recognized as serviceable.	
Stamp of the acceptance inspector	

SELLER INFORMATION

Shop name	
Address	
Telephone	
E-mail	
Sale date	

The unit was received in complete set with the user's manual, the warranty conditions are clear and understood.
Customer signature

Seller stamp here

MOUNTING CERTIFICATE

This is to certify that the air handling unit TwinFresh R1-50 has been connected to power mains pursuant to the requirements stated in this user's operation manual.	
Company name	
Address	
Telephone	
Installer name	
Mounting date:	**Signature:**

The unit mounting meets all applicable local and national construction, electric and technical norms and standards. I have no claims to the unit operation.
Signature:

Installer stamp here

WARRANTY CARD

Product type	Single-room reversible ventilator
Model	TwinFresh R1-50
Serial number	
Production date	
Sale date	
Warranty period	
Selling Company	

Seller Stamp here

NOTES

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